

REMARKS

This is a full and timely response to the outstanding FINAL Office Action mailed June 5, 2008. The Examiner is thanked for the thorough examination of the present application. Upon entry of this response, claims 1-27 are pending in the present application. Applicants respectfully request consideration of the following remarks contained herein. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

I. Response to Claim Rejections Under 35 U.S.C. § 103

The USPTO has the burden under section 103 to establish a *prima facie* case of obviousness according to the factual inquiries expressed in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). The four factual inquiries, also expressed in MPEP §2141, are as follows:

- (A) Determining the scope and contents of the prior art;
- (B) Ascertaining the differences between the prior art and the claims in issue;
- (C) Resolving the level of ordinary skill in the pertinent art; and
- (D) Evaluating evidence of secondary considerations.

For a proper rejection of the claim under 35 U.S.C. §103, the cited combination of references must disclose, teach or suggest all elements / features of the claim at issue. See, e.g., *In re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988) and *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981). Claims 1-8, 11 and 16-23 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Carter et al.* (U.S. Pub. No. 2003/0035374, hereinafter "*Carter*") in view of *Patel et al.* (U.S. Pat. No.

7,126,913, hereinafter "*Patel*"). Furthermore, claims 9-10, 12-15 and 24-27 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Carter* in view of *Patel*, in further view of *Gracon et al.* (U.S. Pat. No. 6,987,732, hereinafter "*Gracon*"). For at least the reasons set forth below, Applicants traverse the rejections set forth.

A. Independent Claim 1

Applicants respectfully submit that independent claim 1 patently defines over *Carter* in view of *Patel* for at least the reason that the combination fails to disclose, teach or suggest the features emphasized below in claim 1.

Claim 1, as amended, recites (emphasis added):

1. An egress rate controller monitoring content traffic transmitted from an edge network node of a packet-switched communications network node comprising:
 - a. a leaky bucket having an initial maximum number of tokens which decreases as packets are received in an associated output buffer at a reception token rate for transmission, ***wherein a size of the leaky bucket is less than or equal to a size of the associated output buffer***
 - b. a plurality of token availability threshold level registers specifying a corresponding plurality of token amounts defining token availability regions; and
 - c. a packet transmission suppression controller selectively suppressing transmission of a packet having a traffic class association based on a current token availability level being within a token availability region specifying transmission suppression of packets of the traffic class

As an initial matter, Applicants respectfully submit that the Office Action fails to point out with particularity how the *Carter* reference discloses a leaky bucket and an associated output buffer, making it difficult for Applicants to fairly respond. See Office Action, page 12: "*As per Claim 1 . . . Carter in view of Patel discloses . . . a. a leaky bucket having an initial maximum number of tokens which decreases as packets are*

received in an associated output buffer at a reception token rate for transmission (e.g., token/leaky bucket shaper) [0084].” The Office Action addresses the “leaky bucket” in claim 1, but apparently fails to address how *Carter* allegedly discloses an “associated output buffer.” While *Carter* generally discloses “output buffers,” *Carter* fails to disclose a leaky bucket and an associated output buffer. At most, *Carter* discloses that the traffic control arrangement depicted in FIG. 7 may be combined with a token/leaky bucket shaper. (*Carter*, par. 0084).

Notwithstanding, Applicants have amended claim 1 to further define certain features of the claimed invention. No new matter is added by the amendment. Applicants respectfully submit that *Carter* and *Patel*, individually and in combination, fail to disclose, teach, or suggest the limitation ***wherein a size of the leaky bucket is less than or equal to a size of the associated output buffer.*** In rejecting claim 1 on page 12, the Office Action relies primarily on the *Carter* reference to allegedly disclose the feature emphasized above. The Office Action refers specifically to the “token/leaky bucket shaper” in paragraph 0084 of the *Carter* reference. Applicants respectfully submit that while *Carter* discloses a bucket shaper, *Carter* fails to disclose that the size of the bucket shaper is less than or equal to the size of an associated output buffer. As such, Applicants submit that *Carter* fails to disclose the limitation ***wherein a size of the leaky bucket is less than or equal to a size of the associated output buffer.*** Moreover, Applicants submit that the secondary *Patel* reference addresses this deficiency in the *Carter* reference.

Accordingly, Applicants respectfully submit that independent claim 1 patently defines over *Carter* in view of *Patel* for at least the reason that the combination fails to

disclose, teach or suggest the highlighted features in claim 1 above. In addition, Applicants submit that dependent claims 2-8 are allowable for at least the reason that these claims depend from an allowable independent claim. See, e.g., *In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988).

B. Independent Claim 16

Applicants respectfully submit that independent claim 16 patently defines over *Carter* in view of *Patel* for at least the reason that the combination fails to disclose, teach or suggest the features emphasized below in claim 16.

Claim 16, as amended, recites (emphasis added):

16. A method of effecting egress rate control comprising the step of:
selectively suppressing packet transmission for a packet of a particular traffic class when a current token availability level of a leaky bucket tracking packet transmissions is between two token availability threshold levels of a plurality of token availability threshold levels, ***wherein the token availability threshold levels correspond to predetermined egress rate control responses to bandwidth utilization with respect to packet traffic classes.***

In addressing claim 16 in the Response to Arguments section, the Office Action asserts that the *Patel* reference “*expressly illustrates an embodiment wherein ‘packets’ belong to a particular ‘flow’ or multiple classes of service’ . . . require a ‘token’ of particular token bucket depth and/or width, as well as the current token availability of the system.*” (Office Action, page 9). The Office Action points to FIG. 8A in the *Patel* reference, which illustrates management of traffic resources using a two-dimensional token bucket. *Patel* generally discloses the use of multiple dimension token buckets that provide the available impact level and/or supply bandwidth for packet transmissions. In particular, the two-dimensional token bucket represents power level as depth of the

bucket and time duration as width of the bucket. The Office Action apparently equates the depth and width parameters with the “two token availability threshold levels” recited in claim 16. Applicants respectfully disagree. In an effort to further prosecution, however, Applicants have amended claim 16 to recite the limitation ***wherein the token availability threshold levels correspond to predetermined egress rate control responses to bandwidth utilization with respect to packet traffic classes*** and submits that neither *Patel* nor *Carter* disclose this limitation. Applicants submit that no new matter is added by the amendment. With reference to the *Patel* reference, *Patel* discloses that “the queue manager 42 checks the two-dimensional token bucket 50 to determine if sufficient tokens 50 are available to support transmission of packet 1 as represented by transmission token 150.” (Col. 10, lines 57-60). *Patel*, however, does not appear to disclose any predetermined egress rate control. Moreover, the *Carter* reference fails to address this deficiency.

Accordingly, Applicants respectfully submit that independent claim 16 patently defines over *Carter* in view of *Patel* for at least the reason that the combination fails to disclose, teach or suggest the highlighted features in claim 16 above. In addition, Applicants submit that dependent claims 17-23 are allowable for at least the reason that these claims depend from an allowable independent claim. See, e.g., *In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988).

C. Independent Claim 9

Applicants respectfully submit that independent claim 9 patently defines over *Carter*, in view of *Patel*, further in view of *Gracon* for at least the reason that the combination fails to disclose, teach or suggest the features emphasized below in claim 9.

Claim 9 recites (emphasis added):

9. An ingress rate controller monitoring content traffic received at an edge network node of a packet-switched communications network node comprising:

a. a leaky bucket having an initial maximum number of tokens which decreases as packets received at a reception token rate are accepted;

b. a plurality of token availability threshold level registers specifying a corresponding plurality of token amounts defining token availability regions;

c. ***a plurality of packet discard probability registers, each packet discard probability register specifying a probability with which packets of a specific traffic class are to be dropped when a current token availability level is within a token availability region***, and

d. a packet acceptance controller selectively randomly discarding packets having a traffic class association based on the current token availability level being within a token availability region specifying random packet discard of packets of the traffic class.

In alleging that the primary *Carter* reference discloses the feature emphasized above, the Office Action points to buffers 51a-c in FIG. 5. The buffers (51a-c) depicted in FIG. 5 represent input buffers to be serviced. *Carter*, however, fails to disclose any "packet discard probability registers" where each packet discard probability register specifies a probability with which packets of a specific traffic class are to be dropped when a current token availability level is within a token availability region. While *Carter* discloses a "buffer overflow probability (BOP)" (par. 0062) and that "[t]he traffic

grooming at egress from the first domain reduces drop probability while transiting to the other domain" (emphasis added; par. 0086), *Carter* fails to disclose that the buffers (51a-c) specifies a probability with which packets of a specific traffic class are to be dropped when a current token availability level is within a token availability region. Moreover, the *Patel* reference and the *Gracon* reference fail to address this deficiency.

Accordingly, Applicants respectfully submit that independent claim 9 patently defines over *Carter*, in view of *Patel*, further in view of *Gracon* for at least the reason that the combination fails to disclose, teach or suggest the highlighted features in claim 9 above. In addition, Applicants submit that dependent claims 10-15 are allowable for at least the reason that these claims depend from an allowable independent claim. See, e.g., *In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988).

D. Independent Claim 24

Applicants respectfully submit that independent claim 24 patently defines over *Carter*, in view of *Patel*, further in view of *Gracon* for at least the reason that the combination fails to disclose, teach or suggest the features emphasized below in claim 24.

Claim 24, as amended, recites (emphasis added):

24. A method, of effecting ingress rate control comprising the step of:
selectively randomly discarding packets of a particular traffic class when a current token availability level of a leaky bucket tracking packets is between two token availability threshold levels of a plurality of token availability threshold levels, ***wherein the token availability threshold levels correspond to predetermined ingress rate control responses to bandwidth utilization with respect to packet traffic classes.***

Applicants have amended claim 24 to recite the limitation ***wherein the token availability threshold levels correspond to predetermined ingress rate control responses to bandwidth utilization with respect to packet traffic classes*** and submits that neither *Patel* nor *Carter* disclose this limitation. Applicants submit that no new matter is added by the amendment. On page 24, the Office Action appears to rely on the *Patel* reference to disclose the “token availability threshold levels” in claim 24. Applicants submit, however, that *Patel* fails to disclose the limitation ***wherein the token availability threshold levels correspond to predetermined ingress rate control responses to bandwidth utilization with respect to packet traffic classes*** as *Patel* fails to disclose any predetermined (ingress) rate control responses. FIGS. 3 and 4 are generally directed to FIG. 3 multiple dimension token buckets. *Patel* further discloses that “the queue manager 42 checks the two-dimensional token bucket 50 to determine if sufficient tokens 50 are available to support transmission of packet 1 as represented by transmission token 150.” (Col. 10, lines 57-60). *Patel*, however, does not appear to disclose predetermined ingress rate control responses. Moreover, the *Carter* reference and the *Gracon* reference fail to address this deficiency.


Accordingly, Applicants respectfully submit that independent claim 24 patently defines over *Carter*, in view of *Patel*, further in view of *Gracon* for at least the reason that the combination fails to disclose, teach or suggest the highlighted features in claim 24 above. In addition, Applicants submit that dependent claims 25-27 are allowable for at least the reason that these claims depend from an allowable independent claim. See, e.g., *In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988).

CONCLUSION

Applicants respectfully submit that all pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephone conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

No fee is believed to be due in connection with this amendment and response to Office Action. If, however, any fee is believed to be due, you are hereby authorized to charge any such fee to deposit account No. 50-0835.

Respectfully submitted,



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